

1 **VI. CLAIMS**

2
3 What is claimed is:

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5 1. An electronic shower temperature display for shower
6 assemblies including a showerhead, comprising:

7
8 A) temperature sensing means having a first input connected to a
9 shower arm of said shower assemblies and a first output generating a
10 voltage signal as a function of temperature sensed by said first input;

11
12 B) computerized means having a second input connected to said
13 first output for processing said signal to generate a second output signal;
14 and

15
16 C) display means connected to said second output signal.
17

18 2. An electronic shower temperature display device which can be
19 easily retrofitted onto an existing shower arm and showerhead assembly of
20 a shower system for a water delivery system that consist of either a
21 dependent or independent hot and cold controls prior to a mixing
22 chamber, comprising:

23
24 A) a sensor-coupling unit housing a temperature sensor;

25
26 B) a panel support bracket; and

27
28 C) a temperature display adjustable display panel assembly

1 having a microprocessor-based circuitry with means to display real-time
2 water temperature, said microprocessor-based circuitry communicating
3 with said temperature sensor by means of a conducting cable, said
4 microprocessor-based circuitry housed within said adjustable display
5 panel assembly, said adjustable display panel assembly further comprising
6 a battery power source communicating with and supplying power to said
7 microprocessor-based circuitry, said adjustable display panel assembly
8 further comprising a manual control interface communicating with said
9 microprocessor-based circuitry, said microprocessor-based circuitry
10 monitors both water temperature and the presence or absence of water
11 through said shower arm and said showerhead assembly.
12

13 3. The electronic shower temperature display device set forth in
14 claim 2, further characterized in that said adjustable display panel
15 assembly further comprises a conductivity sensor, said microprocessor-
16 based circuitry monitor signals from said temperature sensor and said
17 conductivity sensor in order to detect actual said water temperature as it
18 flows through said shower arm and said showerhead assembly.
19

20 4. The electronic shower temperature display device set forth in
21 claim 3, further characterized in that said microprocessor-based circuitry
22 has a programmable memory storage system used for retrieving multi-user
23 temperature settings.
24

25 5. The electronic shower temperature display device set forth in
26 claim 4, further characterized in that said manual control interface is
27 selected from a group consisting of a plurality of buttons, a rotatable knob,
28 or a linear slide control, which may be used to program desired said multi-

1 user temperature settings.

2
3 6. The electronic shower temperature display device set forth in
4 claim 5, further characterized in that said plurality of buttons correspond to
5 said multi-user temperature settings.

6
7 7. The electronic shower temperature display device set forth in
8 claim 6, further characterized in that said adjustable display panel
9 assembly comprises audible alarm means, said microprocessor-based
10 circuitry further comprises a programmable predetermined temperature
11 warning set within said programmable memory storage system, said
12 audible alarm means engaging when said predetermined temperature is
13 surpassed to provide protection from scorching

14
15 8. The electronic shower temperature display device set forth in
16 claim 7, further characterized in that said temperature sensor is selected
17 from the group consisting of a thermocouple, a thermistor, a Resistance
18 Temperature Detector (RTD), an integrated circuit temperature sensor, or a
19 temperature-to-fluid pressure transducer.

20
21 9. The electronic shower temperature display device set forth in
22 claim 8, further characterized in that said conducting cables are removable
23 from said display panel housing.

24
25 10. The electronic shower temperature display device set forth in
26 claim 9, further characterized in that said battery power source is a an
27 electric battery.

1 11. The electronic shower temperature display device set forth in
2 claim 10, further characterized in that said electric battery is an electric dry
3 cell battery.
4

5 12. The electronic shower temperature display device set forth in
6 claim 11, further characterized in that said audible alarm means is selected
7 from the group consisting of an electromechanical buzzer, a piezo
8 transducer, or a speaker tone driver circuit.
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10 13. The electronic shower temperature display device set forth in
11 claim 12, further characterized in that said sensor-coupling unit is generally
12 cylindrical having first and second ends, said first end having female
13 threading and said second end having male threading, said first end
14 removably secured to said shower arm and said showerhead removable
15 secured to said second end.
16

17 14. The electronic shower temperature display device set forth in
18 claim 13, further characterized in that said panel support bracket comprises
19 a cylindrical ring, said sensor-coupling unit snugly fitting within said
20 cylindrical ring.
21

22 15. The electronic shower temperature display device set forth in
23 claim 14, further characterized in that said adjustable display panel
24 assembly connects to a flexible joint to allow said adjustable display panel
25 to swivel, slide, or shift position in order to provide an alternate viewing
26 angle.
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